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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,393	04/01/2004	Hiroshi Tanabe	NECR 19.194A (100806-0026)	7592
26304	7590	12/23/2005	EXAMINER	
KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585			WILSON, ALLAN R	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 12/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AR

Office Action Summary	Application No.	Applicant(s)	
	10/815,393	TANABE ET AL.	
	Examiner	Art Unit	
	Allan R. Wilson	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8,9,15 and 16 is/are allowed.
- 6) ☒ Claim(s) 3-5,7,10 and 14 is/are rejected.
- 7) ☒ Claim(s) 6 and 11-13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/988,962.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>0404 & 0904</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 5 and 12 are objected to because of the following informalities:

Claim 5 has a period at the end of line 4.

Claim 12 has a period at the end of line 5.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 3-5 and 7 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,177,301 to Jung.

With regards to claim 3, Jung illustrates in figures 4A-7C (entire document) forming an amorphous silicon layer (col. 4, lines 10-11) on an insulating substrate 50; irradiating said amorphous silicon layer with a laser line beam along a first direction 63, so that a portion of said amorphous silicon layer irradiated with said laser line beam is converted into a polycrystalline silicon layer (col. 4, lines 39-58);

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patterning said polycrystalline silicon layer into a polycrystalline silicon island; and forming a source region, a channel region and a drain region of said thin film transistor in said polycrystalline silicon island (FIG. 6, FIG. 7A-C and col. 5, lines 41-47).

With regards to claim 4, Jung illustrates in FIG. 7B said source region 71, said channel 74 region and said drain region 72 of said thin film transistor are arranged along a second direction perpendicular to said first direction.

Regarding claim 5, Jung discloses in col. 4, lines 39-58, said laser line beam irradiating step irradiates said amorphous silicon layer with said laser line beam, so that polycrystalline silicon is grown from portions of said amorphous silicon layer close to edges 42 and 43 of said laser line beam to a portion of said amorphous silicon layer close to a center of said laser line beam, said polycrystalline silicon layer being divided into two regions at a line corresponding to the center of said laser line beam (FIG. 4A).

With regards to claim 7, Jung discloses in col. 4, lines 10-15, said insulating substrate comprises a glass substrate.

Claims 10 and 14 are rejected under 35 U.S.C. § 102(e) as being anticipated by Japanese Patent Application No. 6-252398 (JP '398).

With regards to claim 10, JP '398 illustrates in figures 1(A)-(C) (machine translation) forming an amorphous silicon layer 2 on an insulating substrate 1; irradiating said amorphous silicon layer with a plurality of laser line beams 4 along first direction, so that portions of said amorphous silicon layer irradiated with said laser line beams are converted into a plurality of polycrystalline silicon layers 5;

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patterning each of said polycrystalline silicon layers into a plurality of polycrystalline silicon islands 6-1, 6-2, and 6-5, 6-6; and

forming a source region 6-5, a channel region 6-6 and a drain region 6-5 of said P-channel type thin film transistor in one of said polycrystalline silicon islands of one of said polycrystalline silicon layers and a source region 6-2, a channel region 6-1 and a drain region 6-2 of said N-channel thin film transistor in one of said polycrystalline silicon islands of the other of said polycrystalline silicon layers.

With regards to claim 14, JP '398 discloses in paragraph 15 said insulating substrate 1 comprises a glass substrate.

Allowable Subject Matter

Claims 8, 9, 15 and 16 are allowed.

Claims 6 and 11-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims provided the objections above to claims 5 and 12 are overcome.

The following is an examiner's statement of reasons for allowance:

The prior art discloses most of the limitations of the claims, but fails to show at least forming a source region, a channel region and a drain region of thin film transistor in either of the two regions of said polycrystalline silicon island along a second direction perpendicular to said first direction.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Young, Kanaya et al. and Mei et al. all disclose forming a polysilicon channel with a laser.

Any inquiry concerning this communication or earlier communications from an examiner should be directed to Primary Examiner Allan Wilson whose telephone number is (571) 272-1738. Examiner Wilson can normally be reached 7:00-4:00 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allan R. Wilson
Primary Examiner
19 December 2005